Application No. ___A.21-07-012___

Exhibit No. _____

Date _____

Witness _Patrick Kubiak_____

BEFORE THE

PUBLIC UTILITIES COMMISSION

OF THE STATE OF CALIFORNIA

GOLDEN STATE WATER COMPANY

REBUTTAL TESTIMONY

PATRICK KUBIAK

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GOLDEN STATE WATER COMPANY

REBUTTAL TESTIMONY OF

PATRICK KUBIAK

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GOLDEN STATE WATER COMPANY

REBUTTAL TESTIMONY OF

PATRICK KUBIAK

Q: Please state your full name, job title, employer, and address of your place of employment.

A: My full name is Patrick Kubiak. I am employed by Golden State Water Company ("GSWC" or “the Company”) as Field Technology Services Manager. My business address is 160 E. Via Verde, Suite 220, San Dimas, CA 91773.

Q: Did you previously provide testimony in this proceeding?

A: Yes, my Prepared Testimony addressed GSWC’s proposed technology initiatives for Region I, II and III, specifically the completion of the following: Data Warehouse Project, Mobile Workforce Management (“MWM”) Migration Project, Enterprise Asset Management System (“EAMS”) Project, Field Data Management (“FDM”) Project, Geographic Information System (“GIS”) Project, Website Project, PowerApps Project, Mobile Devices Project and SCADA Upgrade Project.

Q: Was this testimony prepared by you or under your direction?

A: Yes.

Q: What is the purpose of this rebuttal testimony?

A: This rebuttal testimony addresses portions of the Public Advocates Office at the California Public Utilities Commission ("Cal Advocates") budget recommendations related to the Report and Recommendations on General Office.

Q: Is there a recommendation you would like to address?

A: Yes, Cal Advocates asserts that GSWC's "request for a new GIS Manager/Supervisor is redundant and unjustified and the Commission should reject GSWC's request for the new position."[1] Cal Advocates claim that because GSWC has already created the Field Technology Services Department and has hired a Field Technology Services Manager, hiring a GIS Manager is redundant and excessive. Cal Advocates provides no other support for their claim.

Q: Does GSWC agree with Cal Advocates' recommendations and assertions?

A: No. Cal Advocates' recommendation to disallow the GIS Manager position based on a claim of redundancy is wrong.

After GSWC reviewed Cal Advocates testimony, GSWC issued a Data Request, (DR) PK-01, to Cal Advocates to determine if they had performed any analysis to reach their conclusion that the GIS Manager position is not needed. In Question 1 of this Data Request, GSWC requested Cal Advocates provide:

- A detailed analysis of roles and responsibilities for both the Field Technology Services Manager and GIS Manager positions justifying Cal Advocates' view that one Full Time Employee is sufficient to take ownership of both positions.

[1] Cal Advocates Report and Recommendations on General Office – Section 4.III.B.2 at 63.

- A benchmarking study demonstrating that these roles and responsibilities are usually addressed with only one Full Time Employee at other water utilities similar in size to GSWC.
- The reasons for Cal Advocates disagreement with Esri's recommendation to create a GIS Manager position at GSWC.

In response to Data Request (DR) PK-01 Question 1 (attached as **Attachment A** – Data Request PK-01), Cal Advocates states that they have not analyzed the roles and responsibilities of these positions and that they did not complete a benchmarking study. As stated in their response to Data Request (DR) PK-01 Question 1, "Cal Advocates did not conduct an analysis of the roles and responsibilities of the Field Technology Services Manager and GIS Manager as requested in sub-question (a) and Cal Advocates did not conduct a benchmarking study as requested in sub-question (b)."

Further, Cal Advocates did not provide their reasons for disagreeing with the analysis completed by Esri (sub-question (c)) justifying the creation of the GIS Manager position. Instead of responding to the question, Cal Advocates just repeated the statements made in their Report and Recommendations on General Office without addressing the request.

Based on Cal Advocates' response, it is clear that Cal Advocates did not perform sufficient analysis of the roles of the existing Field Technology Services Manager and the proposed GIS Manager to support disallowance of the GIS Manager position. However, GSWC has completed an analysis of the two positions, and that analysis, which supports the need for both positions, is presented below.

First, by stating "GSWC *claims* that Esri recommends the creation of a GIS Department to be integrated into the Field Technology Service Department"[2], Cal Advocates seems to be challenging the accuracy of GSWC's interpretation of Esri's 2019 GIS Roadmap[3] ("Roadmap") recommendations. The Roadmap, created for GSWC by Esri – the undisputed industry leader[4] in geographic information system (GIS) software, web GIS and geodatabase management applications – stated:

"GSWC has a GIS Steering Committee providing guidance on strategic GIS issues and a GIS User Group that is focused on technical aspects of GIS, however, it does not have a GIS Department that would serve as the central point of accountability for the GIS system companywide and would oversee the formal stewardship of GIS data and applications. The absence of a formal governance structure combined with limited staffing are creating a number of challenges that are hindering the Company's progress in taking GIS to the next step.

For these reasons as well as to provide a sustainable and maintainable foundation for GIS at GSWC, *Esri is recommending a GIS Department*. *The GIS Department should be part of the Field Technology Services Department so that GSWC's technology applications are centralized in that Department*. The GIS Department should work

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[2] Ibid., emphasis added.

[3] Prepared Testimony of Patrick Kubiak, Vol. 1 of 2, Appendix C.

[4] Independent Report Highlights Esri as Leader in Global GIS Market; https://www.esri.com/about/newsroom/announcements/independent-report-highlights-esri-as-leader-in-global-gis-market/

closely with Asset Management and Operations since most GIS business requirements will originate from these two Groups." [5]

Clearly, Esri recommended the creation of a GIS Department within GSWC's Field Technology Service Department as GSWC claimed. Further, Esri's Roadmap recommends that *the GIS Department should include the following positions*:

- ***GIS Manager/Supervisor*** – Is responsible for the implementation and update of the GIS roadmap. The GIS Manager/Supervisor leads the Company's GIS Department and works to align GIS with organization goals.
- **GIS Administrator** – Provides a broad range of technical skills to support the ArcGIS Server/Enterprise, geodatabases, and business systems integration to GIS. GIS and IT expertise are required for this position.
- **GIS Apps Analyst** – Deploys configurable apps in ArcGIS Online and Enterprise for the field, office, and public. Analyzes GIS data to support business decisions.
- **GIS Data Analyst** – Is responsible for GIS editing to ensure the quality and consistency of data. Analyzes GIS data to support business decisions.
- **GIS Technician** – Edits data in the enterprise GIS using the editing workflow set up by the GIS Analyst. GIS Technician responsibilities could be distributed to key subject matter experts in other departments which could reduce the headcount of the GIS Department. However, the actual data stewardship of the data including quality assurance should be done by the GIS Department."[6]

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[5] Prepared Testimony of Patrick Kubiak, Vol. 1 of 2, Appendix C, Section 1.3.1 at 8, emphasis added.

[6] Ibid., emphasis added.

GSWC's proposal to add a GIS Manager follows Esri's recommendation to the letter and Esri's recommendation is well supported. For example, Esri analyzed other organizations of GSWC's size, and found as follows:

"Esri would expect at least a GIS Manager/Supervisor, GIS Administrator, GIS Analyst, and several GIS editors. For example, American States Utility Services (ASUS) has seven [now eight] employees dedicated to GIS in the GIS Department. Tucson Water with about 550 employees has three GIS Analysts and three GIS Technicians reporting to the GIS Supervisor. Austin Water with about 585 employees has nine GIS staff reporting to two GIS Supervisors who report to the GIS Manager. Typically, there needs to be at least one upper-level business manager dedicated to the GIS system to focus attention on GIS needs to executives within the organization. While there is no single formula for staffing an enterprise implementation, GSWC's staffing structure should follow staffing best practices for an organization of its size of approximately 600 employees." [7]

GSWC's proposed organizational structure, which is reflected in the GRC, follows these 'best practice' recommendations.

In addition, other Class A Water Companies regulated by the Commission have their own GIS Departments and associated Manager/Supervisor positions. California Water Service, for example, has a Department comprised of a GIS/EAM Supervisor, 6 GIS Technicians, 2 EAM Technicians and 1 Program Manager, along with dedicated GIS and EAM Database Administrators in the I.T. Department. San Jose Water, the Class A Water Company most similar to GSWC in number of customer connections,

[7] *Id*., Section 2.4.2 at 27.

has a GIS Department with five full-time staff: a GIS Superintendent, GIS System Administrator, GIS Supervisor, GIS Specialist and GIS Technician. Even Suburban Water, with approximately a quarter the number of customer connections as GSWC, has a GIS Department comprised of a full-time GIS Manager and a GIS Specialist.

Second, as stated in the staffing testimony of Denise Kruger, a management-level position within the Field Technology Services Department ("FTSD") is necessary, in addition to the manager of the FTSD itself, to oversee the growing expectations and management of the GIS system – leading the GSWC's GIS Program, implementing the [GIS] Roadmap, and enabling geospatial analyses to support data-driven decision making.[8]

The incumbent GIS Manager's responsibilities include "the design, implementation, and maintenance of the organization's GIS databases… the development and design of database strategies, monitoring and improving database performance and capacity, and planning for future expansion requirements. The GIS Manager may also design, plan, coordinate and implement database security measures."[9] This skill set and GIS platform expertise is more specific than can be reasonably expected of the FTSD Manager, who is responsible for facilitating the completion and documentation of the overall, Company-wide Technology Strategic Plan, of which GIS is just a part. It is unreasonable for Cal Advocates to expect that one Manager in FTSD can cover all of the responsibilities associated with GSWC's GIS program, much less SCADA, Data Warehouse Project, Mobile Workforce Management (MWM) Migration Project,

[8] Prepared Testimony of Denise Kruger at 20.

[9] Ibid.

Enterprise Asset Management System (EAMS) Project, Field Data Management (FDM) Project, Website Project, PowerApps Project, Mobile Devices Project, etc.

Third, Cal Advocates states that their conclusions are based on "apparent conflicting facts and the change in strategic vision where 'Enterprise GIS' is now abandoned, and the fact that GSWC has already established a centralized IT department and has hired a Manager to run its operations in 2017".[10]

GSWC responded to a Cal Advocates Data Request on this point as follows:

> "The 2014 GIS project focused on building an 'enterprise GIS' where GIS would serve as the 'backbone' for all technology applications at GSWC. The Company departed from this 'enterprise GIS' vision when developing its 2017 Technology Strategic Plan. Instead, GSWC broadened its focus to deploying applications that are specifically designed to address GSWC's business requirements, as opposed to solely focusing on applications that are based on one common underlying technology platform (or 'backbone'). Further, since 2014 GSWC has revised and refined its business requirements for data warehouse, mobile workforce, field data collection, GIS, and other technology initiatives. Finally, the technology and software industry is changing rapidly. Features and capabilities of off the shelf technology applications have evolved significantly since 2014 and pricing has been updated accordingly. GSWC is continuously adapting its initiatives to ensure they are aligned with current technology trends and best practices."[11]

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[10] Cal Advocates Report and Recommendations on General Office – Section 4.III.B.2.a at 65.

[11] **Attachment C** - GSWC Response to Cal Advocates Data Request, AMX-015, Q.(1)(f).

Based on their interpretation of this Data Request response, it appears that Cal Advocates has either misunderstood or intentionally mischaracterized GSWC's approach regarding GIS. In 2014, and in that year's GIS Strategic Plan, GSWC's technology environment was much different than it is today; in particular, there was no Field Technology Services Department or centralized GIS. Therefore, the consultant who prepared the 2014 GIS Strategic Plan recommended that GSWC consider GIS as a key aspect of an enterprise-wide technology platform. As mentioned above, GSWC declined to base its entire IT platform around GIS and has adapted to align with current technology best practices, but GSWC has in no way 'abandoned' its commitment to GIS technology. In fact, through development of the 2014 GIS Strategic Plan, the 2017 Technology Strategic Plan, and the 2019 GIS Roadmap, GSWC has continued to methodically advance the use of GIS throughout the organization.

Since the formation in 2020 of the GIS Department and filling of the GIS Manager role, GSWC has implemented ArcGIS Enterprise as the foundational software system for GIS, powering mapping and visualization, analytics, and data management. While not the 'backbone' for <u>all</u> technology applications at GSWC, it is a critical, central technology for GSWC – acting as the backbone for running GSWC's Esri suite of applications, providing the sole geospatial (mapping and visualization) component for GSWC's distribution system and plant assets, and allowing for associated analytics and key data management tools. And implementation of the activities detailed by Esri in the 2019 GIS Roadmap is a natural continuation of the approach first laid out for GSWC by the consultant in the 2014 GIS Strategic Plan.

In fact, per GSWC's response to a Cal Advocates' Data Request[12], the GSWC GIS initiatives completed since 2014 include:

- 2014
  - Developed GIS Strategic Plan and GIS Implementation Plan
  - Included GIS Project in GRC
  - Upgraded GIS licensing and server
- 2015
  - Centralized GIS server/ArcGIS Server environment
  - Outsourced remaining CAD-GIS conversions for creation and maintenance of all system data in GIS format
  - Initiated publishing of GIS data, building ArcGIS Online Web Apps and Web Maps for internal use via Esri ArcGIS Server and desktop software
- 2016
  - Purchased additional GIS software/licensing
  - Continued creation and maintenance of all system data in GIS format
  - Created as-built management tool and initiated Web Map viewer/mobile pilot
- 2017
  - Incorporated GIS Project into GSWC Technology Strategic Plan
  - Continued creation and maintenance of all system data in GIS format
  - Published atlas, wall maps, and other hardcopy maps for each water system
  - Continued development of web map viewer/mobile pilot
- 2018
  - Completed creation of all system data in GIS format

[12] **Attachment B** - GSWC Response to Cal Advocates Data Request, AMX-006, Q.(6)(a).

- Completed conversion of all hydraulic models
- Purchased additional GIS software/licensing and hardware
- Upgraded as-built management tool

- 2019
  - Developed GetMapLibrary widget to link ArcGIS Online to as-built management tool
  - Initiated Esri Enterprise Advantage Program
  - Created GIS Roadmap and System Architecture Review
- 2020
  - Created GIS Department under Field Technology Services
  - Upgraded ArcGIS environment to version 10.7.1
  - Consolidated 37 system geodatabases
  - Integrated GIS with Data Warehouse Project
  - Implemented Data Reviewer
  - Held GIS Governance workshops
  - Purchased additional GIS hardware (servers) and software/licensing for ArcGIS Enterprise/Portal jumpstart
  - Upgraded ArcGIS environment to version 10.8.1
- 2021
  - Implemented ArcGIS Enterprise production, test, and development environments
  - Utilized GIS software to improve accuracy of CC&B data and began optimizing meter reading routes
  - Piloted ArcGIS Field Maps for Operator iPads, utilizing VPN to traverse security gateway/communicate with Portal

In addition, the established goals for GIS implementation at GSWC since inception of our GIS program in 2009 – GIS Quality, Ease of Access, Integrated GIS, GIS Training, and Sustainability[13] – remain the same. The 2019 GIS Roadmap confirms:

> "As the Company moves forward with its digital transformation plan which involves the deployment of a number of new applications, some of which will *integrate with GIS*, it becomes critical to create and document a GIS governance framework, both from an application and data perspective. This is particularly relevant as the Company is currently considering implementing a new Enterprise Asset Management System (EAMS) which would use GIS as its primary data source.
>
> Esri recommends establishing a formal and documented governance framework for GIS. The framework should be led and implemented by the GIS Department. The GIS governance framework should identify accountability for processes and standards focused on:
>
> - Governing changes to the technology
> - Implementing data management and ensuring data accuracy
> - Defining data ownership
> - *Managing integration of GIS data with other GSWC applications*
> - Automating GIS data conversion processes"[14]

[13] Cal Advocates Report and Recommendations on General Office – Section 7.III.A.1.b at 99; excerpted from 2014 GIS Strategic Plan.

[14] Prepared Testimony of Patrick Kubiak, Vol. 1 of 2, Appendix C, Section 1.3.2 at 11, emphasis added.

All of the above demonstrate the criticality of a GIS Department, and show that a GIS Manager position for GSWC is necessary and justified; the Commission should reject Cal Advocates' recommendation to deny the new position.

Q: Is there another recommendation you would like to address?

A: Yes, Cal Advocates' recommendations for the disallowance of the Data Warehouse Project, Mobile Workforce Management (MWM) Migration Project, Enterprise Asset Management System (EAMS) Project and GIS Project[15] and the specific operating expenses associated with these IT capital projects.[16]

Q: Does GSWC agree with Cal Advocates' recommendations and assertions?

A: No. In their report, Cal Advocates make the following three (3) arguments to justify their recommendation to disallow the Data Warehouse, MWM Migration, EAMS and GIS projects:

- Argument One: GSWC's proposed average annual IT capital expenditures are excessive when compared to GSWC's average historical IT expenditures and those of other Class A water utilities.
- Argument Two: There is no urgency related to the recommended disallowed IT projects.
- Argument Three: Technology projects requested in the 2014 GRC were not pursued by GSWC. As a result, the ratepayers have been paying for these various projects since 2014 but have not received the associated benefits.

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[15] Cal Advocates Report and Recommendations on General Office – Section 7.III.A.1.b at 97.

[16] *Id at* Section 7.III.B at 103.

To support Argument One, Cal Advocates benchmarked GSWC's historical IT capital expenditures against those of other Class A water utilities. The Rebuttal Testimony of Randell Miller provides a detailed analysis of Cal Advocates' benchmarking study and demonstrates it is flawed and unreliable. Please refer to pages 15-17 of Randell Miller's Rebuttal Testimony. Randell Miller shows that GSWC's proposed IT capital spend per number of customers is 28% lower than the historical average spend of comparable Class A water utilities.

GSWC identified numerous errors in the spreadsheet model used by Cal Advocates to develop their benchmarking data. Cal Advocates benchmarking study results, as presented in the Report and Recommendations on General Office, show that the average annual historical IT capital expenditures of Class A water utilities is $9.492 per customer, compared to $10.780 for GSWC. Cal Advocates further asserts that GSWC's proposed spend will be considerably higher than the average of Class A water utilities. After correcting the numerous errors made by Cal Advocates in their spreadsheet model, GSWC shows in the Rebuttal Testimony of Randell Miller that the average annual historical spend of other Class A water utilities is actually $18.638 per customer, compared to only $10.691 for GSWC. Further, GSWC's proposed annual IT capital spend for this GRC is $13.441 per customer, 28% lower than the average historical spend of other Class A water utilities. The table below illustrates these findings.

	Average Annual IT Capital Spend Per Number of Customers
Comparable Class A Water Utilities - Historical	$18.638
GSWC – Historical	$10.691
GSWC – Proposed	$13.441

Further, Cal Advocates states that GSWC's proposed IT capital expenditures are excessive in terms of its own historical spend. GSWC disagrees with this statement and provides a comprehensive justification for its position on pages 13-15 of the Prepared Rebuttal Testimony of Randell Miller. In his Rebuttal Testimony, Randell Miller highlights an inconsistent representation of GSWC's IT capital and the use of inaccurate data by Cal Advocates throughout its report.

With Argument Two, Cal Advocates insinuates there is no urgency in completing the MWM Migration, Data Warehouse, EAMS, and GIS Projects because GSWC first proposed these projects in 2014 and still has not felt the need to implement them. GSWC disagrees with Cal Advocates' insinuation.

The urgency associated with these projects is clear and is supported by their current status:

- The Data Warehouse Project is complete.
- The MWM Migration Project is complete and the MWM application has been live since July 2017.
- The EAMS Project is underway. GSWC has completed its vendor selection process and is moving forward with next steps, as planned. Next steps: include asset data curation, System Integrator selection, and system implementation.

- Significant milestones have been achieved for the GIS Project and GSWC is moving forward with the initiatives listed on its GIS Roadmap. Please refer to the following section of this rebuttal for additional details.

Cal Advocates' third argument is that GSWC ratepayers have been paying for the IT projects described in the 2014 GIS Testimony but did not receive the associated benefits because "the projects were not completed in the time proposed"[17]. Cal Advocates statement is inaccurate and mischaracterizes the information provided to them. The status of these IT projects (as described above) has been discussed at length in both GSWC's response to Data Request AMX-006 (**Attachment B**) and during the September 22, 2020 in-person interview with Patrick Kubiak. Once again, Cal Advocates were provided an opportunity to address their mischaracterization with Data Request (DR) PK-01 but declined to address it by stating "Cal Advocates object to this data request as it misconstrues Cal Advocates position".

Further, GSWC did spend its entire 2014 GIS capital budget to fund IT and other initiatives to meet the needs of its ratepayers. Cal Advocates' argument that GSWC ratepayers have not benefited from the capital funds associated with the 2014 GIS Testimony is inaccurate.

Finally, Cal Advocates directly contradict their own statement regarding the deployment of GIS and MWM technologies. On page 53 of the Report and Recommendations on General Office, Cal Advocates state "Finally, GSWC has started to reap some savings of its capital investment in the informational technology resources such as Mobile Workforce Management, SCADA, and GIS systems". With

[17] *Id at* Section 7.III.A.1.b at 103.

this statement, Cal Advocates acknowledges that GIS and MWM technologies have indeed been deployed and that these projects benefit water ratepayers.

Q: Which GIS specific projects did GSWC complete since 2014?

A: Through the development of the 2014 GIS Strategic Plan, the 2017 Technology Strategic Plan, and the 2019 GIS Roadmap, GSWC has continued to methodically advance the use of GIS throughout the organization.

Cal Advocates states that a number of top priority GIS initiatives identified since 2014 were not pursued. In support of their argument, Cal Advocates states that "for GIS Project, several subparts such as "Create As-Built Management Tool", "Creation and Maintenance of All Systems Data in GIS Format," "Publishing of GIS Data and Web Maps for Internal Use, "Customer Care and Billing (CC&B) Integration," and "Development and Analysis of GIS-based Hydraulic Model" all were marked as the top priority but were not pursued by GSWC as such and the project is now again requested in 2020."[18] This is false.

As stated in the Prepared Testimony of Patrick Kubiak:

> "In 2014, GSWC developed a GIS Strategic Plan ("GIS Plan") providing recommendations on the implementation of an enterprise GIS and the creation of a system which could provide content and context on GSWC's assets. The Company has made great progress in *implementing key recommendations suggested in the Plan*, including:
>
> - Creation of an as-built management tool

[18] *Id* at 101.

- Creation and maintenance of all system data in GIS format
- Publishing GIS data and web maps for internal use
- Developing and analyzing GIS-based hydraulic models
- Publishing atlas, wall maps, and other hardcopy maps"[19]

These same items were also listed in response to a Cal Advocates' Data Request[20] asking GSWC to "Provide a time-line for the GIS related capital projects starting from 2009 to the present, and list all major activities and steps taken along with the actual cost spent." GSWC not only 'pursued', but also completed these projects.

In addition, "GSWC has already made significant progress in completing the [new] projects described in the Prepared Testimony of Patrick Kubiak. As of 11/2/2020… GSWC has created the GIS Department [and filled the GIS Manager position], upgraded its system architecture, consolidated all thirty-seven (37) geodatabases, set up Data Reviewer, is in the process of finalizing its GIS data governance, and has upgraded to the latest version of ArcGIS."[21]

As stated in the Prepared Testimony of Patrick Kubiak:

> "The GIS Project will build upon the progress GSWC has made in this area since 2014 and will provide a solid strategic, organizational and technical foundation to take the Company's use of the technology to the next step.

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[19] Prepared Testimony of Patrick Kubiak Vol. 1 of 2 at 36, emphasis added.

[20] **Attachment B** - GSWC Response to Cal Advocates Data Request, AMX-006, Q.(6)(a).

[21] **Attachment C** - GSWC Response to Cal Advocates Data Request, AMX-015, Q.(1)(c).

> *Without this project, it will be challenging for the Company to move past the status quo*."[22]

Cal Advocates misinterpreted GSWC's request for the GIS Project in the 2020 GRC as being similar in scope to the request made in 2014. It is not. As demonstrated above, GSWC made significant progress in completing the scope envisioned in 2014 and is now building upon it and requesting further improvements reflecting Esri's recommendations as stated in the 2019 GIS Roadmap. Creation of the GIS Department, deploying new GIS system architecture, consolidating geodatabases, implementing Data Reviewer, formalizing GIS governance, and upgrading to the latest version of ArcGIS are all specifically identified in the 2019 GIS Roadmap, and are foundational for the impending deployment of GIS-based field applications and major GIS technology changes, including the Utility Network upgrade.[23] And, as the Commission certainly understands, the 'status quo' is not sufficient; not only is the technology and software industry changing rapidly, but the assets of all water utilities are aging rapidly and in need of these technological advances to aid in monitoring, maintenance, and replacement. As stated in a report cited by Cal Advocates in their 'Report and Recommendations on Pipeline Replacement'[24], "Over the past 20 years, most utilities have come to realize the importance of tracking all aspects of their infrastructure in a GIS-centric platform and have collected records on the types, sizes, and repair histories of their pipes. As this trend continues, more data and analysis will

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[22] Prepared Testimony of Patrick Kubiak Vol. 1 of 2 at 44, emphasis added.

[23] *Id* at 38-41.

[24] Cal Advocates Report and Recommendations on Pipeline Replacement at 31.

be available to the industry to improve water distribution system repair and replacement decision making."[25]

Q: Does Cal Advocates dispute the need for the Data Warehouse, EAMS, MWM Migration, and GIS Projects?

A: No. GSWC provided thorough descriptions for the need of each project in the Prepared Testimony of Patrick Kubiak and in responses to Cal Advocates data requests. Not once did Cal Advocates dispute the need for these projects.

One key argument made by Cal Advocates to support their recommendation to disallow these projects is that GSWC's IT capital expenditures are larger than those of other Class A water utilities. As demonstrated above, this argument does not have any merit since the benchmarking study it is based on is flawed and unreliable.

Q: What will be the consequences of not funding the MWM Migration, Data Warehouse, GIS and EAMS Projects?

MWM Migration Project

Cal Advocates may have misunderstood the purpose of the MWM Migration Project. The project scope is not to deploy the MWM application but to change its hosting model. The MWM application was successfully deployed in July 2017.

[25] Utah State University Buried Structures Laboratory "Water Main Break Rates in the USA and Canada: A Comprehensive Study" at 7.

As described in detail on pages 18-21 of the Prepared Testimony of Patrick Kubiak, Oracle (the MWM technology vendor) decided to stop hosting the MWM application in the Oracle Cloud, which is where GSWC's application was hosted. Because of Oracle's decision, GSWC has no other choice than to migrate its MWM application to another hosting model. The scope of the MWM Migration Project is to transition from the Oracle Cloud hosting platform to a new platform managed by a third party.

Without the MWM Migration Project, GSWC will not be able use the MWM application and will have to decommission it. The investment made by the Company on behalf of its ratepayers will be wasted and GSWC will have to return to manual and paper-based business processes to complete customer service activities.

Data Warehouse Project

As stated in the Prepared Testimony of Patrick Kubiak

> "The existing GSWC data estate is decentralized, impacting GSWC's ability to effectively develop and update internal financial and operational reports and dashboards. Key challenges faced by the Company include:
>
> - Manual, labor intensive, and time-consuming process to retrieve data from several enterprise systems and ensure data integrity.
> - Inefficient data exchange process across business units.
> - Manual data update processes.
> - Delayed access to key data and reports for internal clients.
> - Lack of standardization for internal clients to access data.
> - No foundation for advanced data analytics (Machine Learning/Artificial Intelligence ("ML"/"AI")."

Without the Data Warehouse Project, GSWC will have to resort to manual, labor intensive processes in order to build the data analytics necessary to manage its operations. Further, as GSWC moves forward with its digital transformation -along with other water utilities - it will continue to deploy more technology and acquire more data. Not having the Data Warehouse Project in place will make it impossible to harvest and analyze all the data being created by GSWC's new applications, therefore significantly reducing the value of its technology initiatives.

GIS Project

As detailed above, tremendous progress has been made since 2014 with regard to GSWC's GIS program. However, progress must continue in order to fully attain the vision originally defined in the 2014 GIS Strategic Plan – to "Provide a robust and high-quality Geographic Information System (GIS) that empowers users (both office-based and field workforce) to efficiently manage and maintain accurate, reliable, and consistent geographic data, and to easily and quickly obtain information in various formats on demand."

Remaining key 'pain points' identified in 2019 in the GIS Roadmap include:

- Paper maps are only published annually and do not provide the level of information and accuracy that would be available to field staff with electronic maps.
- There is no automated Redline tool for the field to request changes (assets to add, update, or delete), and issues or inaccuracies identified in the field must be manually reported.
- Hydrant inspections, valve inspections and valve exercising activities are currently being performed following paper-based business processes.

- Support currently provided on the GIS technical infrastructure is dependent on availability of GSWC I.T. staff, and there are limited internal resources to: proactively tune the systems, plan, and implement system upgrades, regularly deploy the latest version of ArcGIS, and configure commercial-off-the-shelf (COTS) solutions.

Should the GIS Project be disallowed, GSWC will not be able to leverage GIS-based applications to digitize the existing manual, paper-based business processes related to map viewing, editing, and field activities. Further, GSWC will be unable to:

- Fully deploy the robust system architecture that has been designed to support the improvements recommended in the Roadmap.
- Continue upgrading to the latest version of ArcGIS (and thereby leverage the latest tools available and benefit from bug fixes).
- Identify and plan for major changes to technology that will impact the use of GIS in the future (i.e. ArcGIS Pro, since ArcMap will no longer be the main Desktop application supported by Esri, and the replacement of geometric network in ArcMap with Utility Network in ArcGIS Pro).

Ultimately, the Company will fall behind with its GIS program when compared to its peers, impacting the level of service provided to its customers.

EAMS Project

EAMS applications are widespread in the utility industry and GSWC is one of the outliers for not having one already deployed.

GSWC just completed its EAMS vendor selection process. As part of this process, GSWC shortlisted three (3) vendors and requested they provide their number of existing U.S. utility customers. Their response is depicted in the table below:

	Number of Existing U.S. Utility Customers
Vendor A	105
Vendor B	73
Vendor C	150+[26]

GSWC's three (3) shortlisted vendors reported having a total of 328+ U.S. utility customers. This is by no means an exhaustive view of all the U.S. utilities using an EAMS application but clearly demonstrates the prevalence of this technology in the utility industry.

Should the EAMS Project be disallowed, GSWC will have to continue using manual and paper-based processes to complete work orders and manage its inventory. Further, the Company will not have the right tools to extract the most value out of its assets, both from a functional and cost perspective. The Company will fall behind with its asset management program when compared to its peers, ultimately impacting the level of service provided to its customers.

Q: Is there anything you would like to add?

A: Yes. As discussed above, Cal Advocates does not dispute the need for the Data Warehouse, EAMS, MWM Migration, and GIS Projects.

[26] Exact number cannot be revealed due to Vendor C's confidentiality clause.

However, they make flawed arguments to recommend their disallowance by the Commission. Chief among them is that GSWC's proposed IT capital expenditures are greater than those of other Class A water utilities. GSWC successfully invalidates this argument in this rebuttal and Randell Miller's rebuttal by demonstrating that GSWC's proposed IT capital spend per number of customers is 28% lower than the historical average spend of comparable Class A water utilities.

For the reasons listed in this rebuttal, the Commission should deny Cal Advocates' recommendation to disallow the capital expenditures and the associated expenses proposed by GSWC for the Data Warehouse, EAMS, MWM Migration, and GIS Projects.

Q: Does this conclude your testimony.

A: Yes, it does.

Attachment A – Data Request PK-01

Attachment B – Data Request AMX-006

Attachment C – Data Request AMX-015

REBUTTAL TESTIMONY OF PATRICK KUBIAK

ATTACHMENT A – DATA REQUEST PK-01

Public Advocates Office
California Public Utilities Commission
505 Van Ness Avenue
San Francisco, CA 94102
Phone: (415) 703-1584

http://publicadvocates.ca.gov

Public Advocates Office Data Response
A.20-07-012: Golden State Water Company (GSWC)
2022-2024 General Rate Case

Date: March 9, 2021

To: **Keith Switzer** — Phone: (909) 394-3600
GSWC Vice President, Regulatory Affairs — Email: kswitzer@gswater.com

Joseph M. Karp — Phone: (415) 591-1000
Attorney for GSWC — Email: jkarp@winston.com

From: **Victor Chan** — Phone: (213) 576-7048
Public Advocates Office — Email: victor.chan@cpuc.ca.gov
Project Lead

Shanna Foley — Phone: (213) 620-2465
Public Advocates Office — Email: shanna.foley@cpuc.ca.gov
Attorney

Mehboob Aslam — Phone: (213) 576-7781
Public Advocates Office — Email: mehboob.aslam@cpuc.ca.gov

Re: GSWC Data Request No. PK-01 (IT Position and GIS)

GENERAL OBJECTIONS

The Public Advocates Office provides the following responses to GSWC's Data Request (DR) PK-01 to the Public Advocates Office dated March 2, 2021.

Questions from GSWC's DR PK-01 are reproduced below, followed by Public Advocates Office Responses, solely for ease of reference. The Public Advocates Office does not adopt or admit any question or any portion of any question as correct or true. The Public Advocates Office reserves the right to supplement, clarify, revise, or correct any or all of the responses and objections

herein, and to assert additional objections or privileges, in one or more subsequent supplemental response(s). Responses pertaining to questions of law or legal conclusions have been prepared with the assistance of counsel.

The Public Advocates Office objects to each data request to the extent it mischaracterizes Public Advocates Office's Opening Testimony.

The Public Advocates Office objects to each data request to the extent it is overly broad, unduly burdensome, or not reasonably calculated to lead to the discovery of admissible evidence.

The Public Advocates Office objects to each instruction, definition, and data request to the extent that it seeks information or documents protected from disclosure by the attorney-client privilege, attorney work product doctrine, or any other applicable privilege.

The Public Advocates Office objects to each instruction, definition, and data request as overbroad and unduly burdensome to the extent it seeks documents or information that are readily or more accessible to GSWC from GSWC's own files, from documents or information in GSWC's possession, or from documents or information that GSWC previously produced to the Public Advocates Office. Responding to such requests would be oppressive, unduly burdensome, and unnecessarily expensive, and the burden of responding to such requests is substantially the same or less for GSWC as for the Public Advocates Office. All such documents and information will not be produced.

The Public Advocates Office incorporates by reference every general objection set forth above into each specific response set forth below. A specific response may repeat a general objection for emphasis or some other reason. The failure to include any general objection in any specific response does not waive any general objection to that request.

Question 1:
On page 64, Cal Advocates state:
"Therefore, in the presence of a newly formed centralized IT department and its Manager, the request for hiring a GIS Manager is redundant and excessive."

(a) Please provide a detailed analysis of roles and responsibilities for both the Field Technology Services Manager and GIS Manager positions justifying Cal Advocates' view that one Full Time Employee is sufficient to take ownership of both positions.

(b) Please supplement this analysis with a benchmarking study demonstrating that these roles and responsibilities are usually addressed with only one Full Time Employee at other water utilities similar in size to GSWC.

(c) Appendix C – GIS Roadmap Plan for Golden State Water Company of Patrick Kubiak's Prepared Testimony, a report prepared by Esri, clearly describes the need for the GIS Manager position. Please describe why CalPA disagrees with Esri's analysis and recommendation regarding the creation of a GIS Manager position at GSWC.

ANSWER 1(a)(b)(c):
Cal Advocates' position is fully explained in its report (Pages: 63-65 of the public version). Cal Advocates did not conduct an analysis of the roles and responsibilities of the Field Technology Services Manager and GIS Manager as requested in sub-question (a) and Cal Advocates did not conduct a benchmarking study as requested in sub-question (b). Instead, Cal Advocates' recommendations are based on the following facts as set forth in its testimony:

1) GSWC has abonded its Strategic GIS Enterprise approach in 2017 based on the recommendations of another outside consultant, Navigant Consulting, Inc. See GSWC's response to Cal Advocates' Data Request, AMX-015, Q.1(f).
2) In 2017 GSWC established its existing Field Technology Services Department (FTSD) that was based on Navigant's recmmendations to establish a Business Technology Service Department (BTSD). Thus, FTSD department was envsioned to lead the ongoing modernization of the Regulated Utilities group by centralizing, planning, and managing technology initiatives as well as standardizing and overseeing existing technology systems.
3) According to the Navigant's recommendation, the FTSD Director/Manager should focused on identifying, developing, and implementing technology deployments for Regulated Utilities as well as managing existing systems with the goal of driving increased efficiency, effectiveness, controls, and standardization across all aspects of the businesses. The Director/Manager should develop the strategic direction of technology within the Regulated Utilities organization with input from internal stakeholders, subject matter experts, and industry trends and best practices. The Director/Manager should also be responsible for facilitating the completion and documentation of theTechnology Strategic Plan, which identifies technology deployments over a five-year period.
4) Due to the fact that GSWC has actually established FTSD and has hired a Manager for its FTSD, the request for a GIS manager is unnecessary for the GIS Enterprise that was already abandoned by GSWC.

For these reasons, Cal Advocates disagrees with the Esri analysis.

[redacted]

[redacted]

[redacted]

Question 3:
On page 103, lines 3 – 5, Cal Advocates state:
"Additionally, the ratepayers have been paying for these various projects since 2014 but have not received the benefits as the projects were not completed in the time proposed."

As discussed in detail in responses to Cal Advocates data requests and during the interview with Patrick Kubiak, significant progress has been made since 2014 in completing GIS projects described in the 2014 General Rate Case (GRC), Exhibit GS-31, Prepared Testimony of Robert McVicker and Mark Insco - Operating District Capital Additions. Additionally, the Mobile Workforce Management (MWM) application was deployed in 2016. Please describe why Cal Advocates believe GSWC customers have not been benefiting from the deployment of these technologies.

ANSWER 3:
Cal Advocates object to this data request as it misconstrues Cal Advocates position. Cal Advocates is mainly addressing the unusual delay in completing these various IT projects that were authorized in the 2014 GRC and yet again were "rolled over" by GSWC in its 2017 GRC. Notwithstanding this objection, Cal Advocates answers as follows:

Cal Advocates' position is fully explained in its report (Pages: 63-65, and 97-103 of the public version). More specifically, Cal Advocates points out that the various IT projects which GSWC requested in its 2014 GRC as urgent and were subsequently authorized by the Commission, were not completed in the time requested, and in fact, are still being requested in the instant GRC---a lapse of approximately six years:

> It is amply clear that these IT Projects were initially proposed in 2014 as an integral part of "GIS Project" under a strategic Enterprise GIS vision but are now proposed as stand-alone project when GSWC abandoned its strategic Enterprise vision. All these details point to the fact that there is no real urgency for GSWC, as the projects have been delayed by the company since being requested in 2014 even though several of hese projects were marked as priority.
>
> For example, for GIS Project, several subparts such as "Create As-Built Management Tool", "Creation and Maintenance of All Systems Data in GIS Format," "Publishing of GIS Data and Web Maps for Internal Use, "Customer Care and Billing (CC&B) Integration," and "Development and Analysis of GIS-based Hydraulic Model" all were marked as the top priority but were not pursued by GSWC as such and the project is now again requested in 2020. Similarly, the other three IT projects shown in Table 7-7 above were also part of the 2014 "GIS Project" and were rolled over to 2017 GRC, and now once again GSWC requests them in the instant GRC as well.
> **(Cal Advocates Report, Page 101,1 Public ~~Confidential~~ Version)**

Thus, it is clear that such delay in completing the projects that were authorized in 2014 and were included in rates, creates a disadvantage for the captive ratepayers who have paid for these projects in the rates but have received no benefits.

END OF RESPONSE

REBUTTAL TESTIMONY OF PATRICK KUBIAK

ATTACHMENT B – DATA REQUEST AMX-006

Golden State Water Company
A Subsidiary of American States Water Company

September 23, 2020

Mehboob Aslam, Public Advocates Office
CALIFORNIA PUBLIC UTILITIES COMMISSION
505 Van Ness Avenue
San Francisco, CA 94102

Subject: Data Request AMX-006 (A.20-07-012) GO IT Projects Response
Due Date: September 16, 2020; Extension Due Date: September 23, 2020

Dear Mehboob Aslam,

In response to the above referenced data request number, we are pleased to submit the following responses:

[redacted]

1

[redacted]

[redacted]

[redacted]

[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]

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[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]

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[redacted]

[redacted]

[redacted]

Question 6:
Referring to pages 37-44 of Patrick Kubiak, the various details of Geographic Information System (GIS) Project, are discussed. Please provide the following information:

a. Provide a time-line for the GIS related capital projects starting from 2009 to the present, and list all major activities and steps taken along with the actual cost spent.

[redacted]

[redacted]

Response 6:
6.a See below a timeline for the GIS Project.

Timeline	Activity	Third Party Costs
2009 – 2011	Pilot project conversions to GIS-centric system maps and InfoWater hydraulic models; initial GIS and hydraulic model software/licensing	$220,000
2012	Standardized on Esri's "Local Government Information Model" schema; additional GIS and hydraulic model software/licensing; begin in-house CAD-GIS conversions (internal effort, utilizing Esri desktop software)	$30,000
2014	Additional/upgrade GIS and hydraulic model licensing and server; development of GIS Strategic Plan and GIS Implementation Plan; GIS Project included in GRC	$98,700
2015	Centralized GIS server/ArcGIS Server environment; outsourced remaining CAD-GIS conversions for creation and maintenance of all system data in GIS format; began publishing GIS data (building ArcGIS Online WebApps and web maps for internal use via Esri ArcGIS Server and desktop software)	$70,500
2016	Additional GIS and hydraulic model software/licensing; continued creation and maintenance of all system data in GIS format; EPS hydraulic model development; creation of as-built management tool and web map viewer/mobile pilot	$387,700
2017	GIS Project incorporated in GSWC Technology Strategic Plan; continued creation and maintenance of all system data in GIS format; published atlas, wall maps, and other hardcopy maps for each water system; continued EPS hydraulic model development; continued development of web map viewer/mobile pilot; additional hydraulic model licensing	$231,600

2018	Completed creation and maintenance of all system data in GIS format and all hydraulic models converted to InfoWater; additional Esri software/licensing and hardware and UDF hydraulic model licensing; upgrade as-built management tool	$227,700
2019	GetMapLibrary widget to link ArcGIS Online to as-built management tool; initiation of Esri Enterprise Advantage Program; creation of GIS Roadmap and System Architecture Review (via EAP); upgrade hydraulic model licensing	$141,700
2020	Upgrade to ArcGIS 10.7.1; consolidation of 37 system geodatabases and Data Warehouse integration; implement Data Reviewer; GIS Governance workshops (all via EAP); additional GIS hardware (3 ESX servers (2-GO & 1-DR) along with 3 servers for VDI (2-GO & 1-DR) and software/licensing for ArcGIS Enterprise/Portal jumpstart and upgrade to ArcGIS 10.8.1 (via EAP)	$218,000

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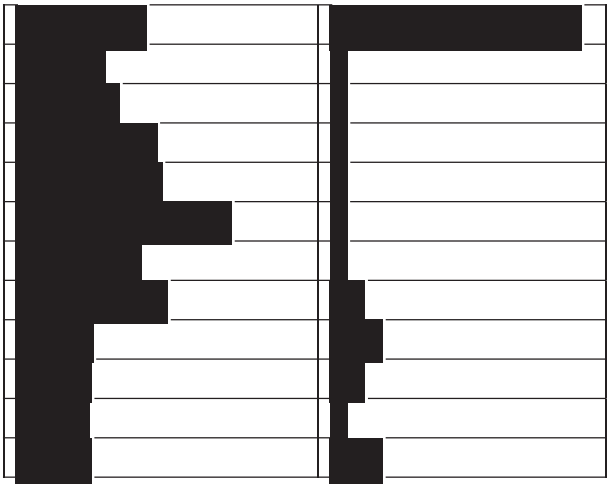

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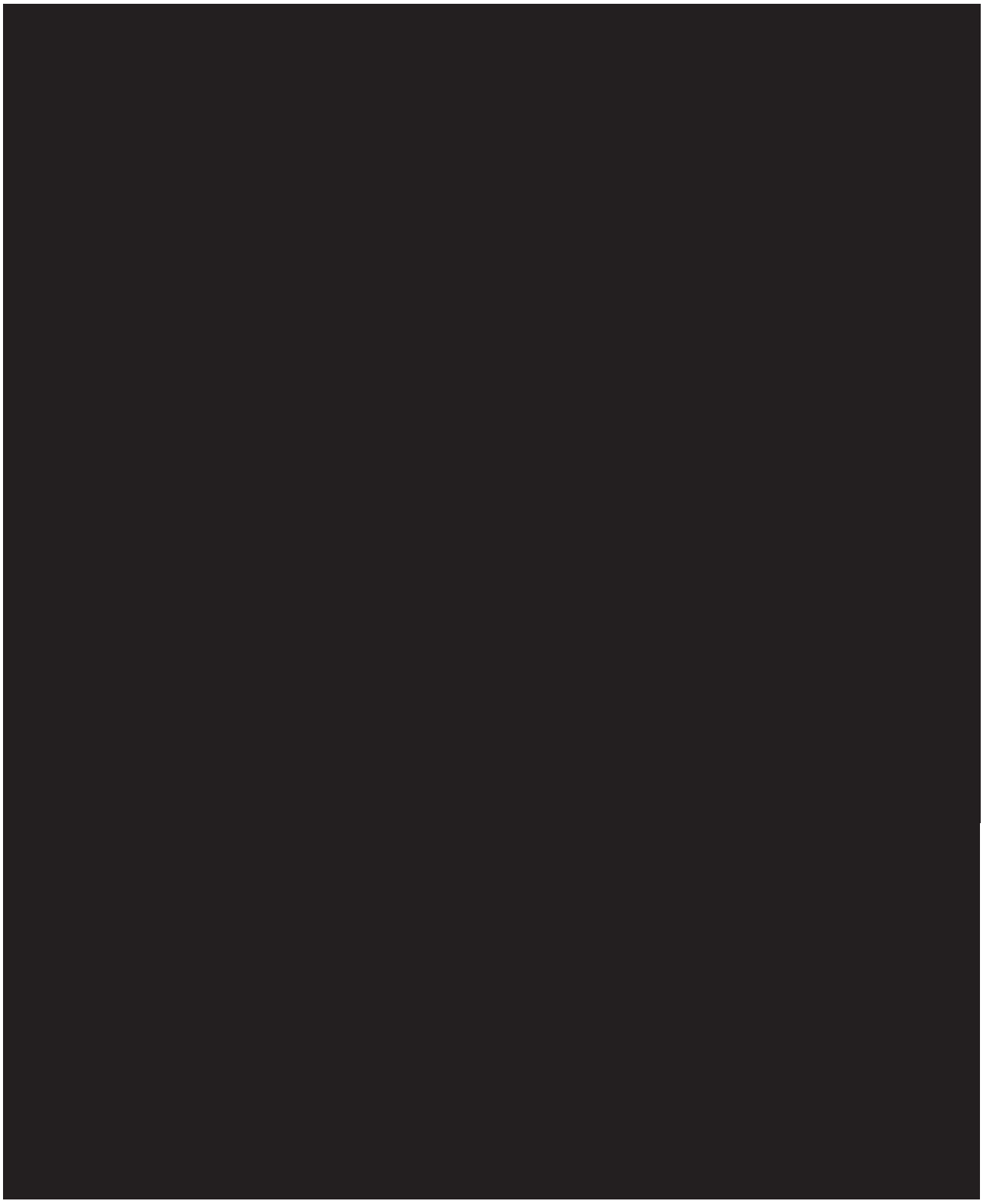

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If you have any questions, please do not hesitate to call me at (909) 394-3600, Extension 680.

Sincerely yours,

For Keith Switzer
Vice President – Regulatory Affairs

c: Eileen Odell, Project Lead
Victor Chan, Project Coordinator
Shanna Foley, Attorney for Public Advocates Office
Joseph Karp, Attorney for GSWC
Chris Kolosov, Attorney for GSWC
Jenny Darney-Lane, Manager of Regulatory Affairs
Jon Pierotti, Manager of Regulatory Affairs

REBUTTAL TESTIMONY OF PATRICK KUBIAK

ATTACHMENT C – DATA REQUEST AMX-015

Golden State Water Company
A Subsidiary of American States Water Company

November 6, 2020

Mehboob Aslam, Public Advocates Office
CALIFORNIA PUBLIC UTILITIES COMMISSION
505 Van Ness Avenue
San Francisco, CA 94102

Subject: Data Request AMX-015 (A.20-07-012) 2014 GIS Project Response
Due Date: November 6, 2020

Dear Mehboob Aslam,

In response to the above referenced data request number, we are pleased to submit the following responses:

Question 1:
Referring to the Prepared Testimony of Patrick Kubiak, Appendix-B: 2014 GIS Testimony, provide the following information:

[redacted]

c. Explain the reasons for the delay if any of the projects were delayed beyond their authorized years of construction per item 1(b) above.

[redacted]

1

f. Explain in detail changes in the scope and the cost estimates for the following projects for the current GRC, A.20-07-012 as compared to the 2014 and 2017 GRCs:
   i. Data Warehouse Project
   ii. MWM Migration Project
   iii. EAMS Project
   iv. FDM Project
   v. GIS Project
   vi. Website Project
   vii. PowerApps Project
   viii. Mobile Devices Project

Response 1:

[redacted]

c. Please refer to GSWC's response to data request "AMX-006", in particular answers to questions 2b, 3b, 4b, 5b and 6b.

Additionally, please note that GSWC has already made significant progress in completing the projects described in the Prepared Testimony of Patrick Kubiak. As of 11/2/2020:

- The Implementation Phase of the Data Warehouse Project is 90% complete
- The MWM Migration Project Phase 1 is 100% complete
- Phase 1 of the EAMS Project is 100% complete. Phase 2 of the EAMS Project has started and is 30% complete.
- Phase 1 of the FDM Project is 100% complete.
- GSWC has created the GIS Department, upgraded its system architecture, consolidated all thirty-seven (37) geodatabases, set up Data Reviewer, is in the process of finalizing its GIS data governance, and has upgraded to the latest version of ArcGIS.
- The implementation of the new website is 100% complete
- GSWC has deployed a number of PowerApps applications including a Task Order management application and COVID-19 self-certification application.
- Mobile devices have been provided to all GSWC operators.

[redacted]

f. The 2014 GIS project focused on building an “enterprise GIS” where GIS would serve as the “backbone” for all technology applications at GSWC.

The Company departed from this “enterprise GIS” vision when developing its 2017 Technology Strategic Plan. Instead, GSWC broadened its focus to deploying applications that are specifically designed to address GSWC’s business requirements, as opposed to solely focusing on applications that are based on one common underlying technology platform (or “backbone”).

Further, since 2014 GSWC has revised and refined its business requirements for data warehouse, mobile workforce, field data collection, GIS and other technology initiatives.

Finally, the technology and software industry is changing rapidly. Features and capabilities of off the shelf technology applications have evolved significantly since 2014 and pricing has been updated accordingly. GSWC is continuously adapting its initiatives to ensure they are aligned with current technology trends and best practices.

If you have any questions, please do not hesitate to call me at (909) 394-3600, Extension 680.

Sincerely yours,

For Keith Switzer
Vice President – Regulatory Affairs

c: Eileen Odell, Project Lead
Victor Chan, Project Coordinator
Shanna Foley, Attorney for Public Advocates Office
Joseph Karp, Attorney for GSWC
Chris Kolosov, Attorney for GSWC

Jenny Darney-Lane, Manager of Regulatory Affairs
Jon Pierotti, Manager of Regulatory Affairs